

spikes; stamens of staminate flowers 5, opposite the perianth segments; bracts of carpellate flowers triangular-ovate, short-petiole, entire, 3-7 mm. broad and long, obtuse or mucronate at apex, united only at the very base, usually bearing a few inflexed cilia on the upper margin, each pair of bracts enclosing from 2 to 6 carpellate flowers; perianth of carpellate flowers well-developed, consisting of 5 hyaline, lanceolate or oblanceolate, sparsely ciliate-margined scales, 1.0-1.2 mm. long, persistent in the cupule formed by the bracts; utricle suborbicular, compressed, black, smooth and shining, 1.5 mm. long, falling free at maturity, not permanently enclosed within the bracts; seed vertical; radicle inferior.

COLORADO. Montezuma County: barren clay slope of mesa, northeast of trading post on Mancos River a few miles above its junction with the San Juan River, ca. 27 mi. southwest of Towaoc, Ute Indian Reservation (Township 32 N., Range 19 W., Section 17), June 12, 1949, *W. A. Weber 4788* (type, Univ. of Colorado Herb.; isotypes, Gray Herb., Pomona College Herb., U. S. Nat. Herb., Univ. of California Herb.).

The writer wishes to express his appreciation to Dr. John Hough for preparation of the Latin diagnoses.

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REVIEW

Marin Flora, Manual of the Flowering Plants and Ferns of Marin County, California. By JOHN THOMAS HOWELL. University of California Press, Berkeley and Los Angeles, California. vii + 1-323 pp., frontispiece, plates 1-24, maps 2. 1949. \$4.50.

Among the symptoms of approaching maturity of the science of Botany in California are the number of semi-popular and popular local floras that are beginning to appear for various regions of the state. The latest is "Marin Flora" by John Thomas Howell of the California Academy of Sciences. Such works serve a very useful purpose for the professional botanist as well as for the layman and naturalist. They become a detailed historical record of the composition and condition of a flora which through the activities of man is destined to become irrevocably altered with time.

The first twenty-eight pages deal with a discussion of descriptive ecology and plant geography as these appear to relate themselves to the physical features of the area. The lists of plants comprising the various plant associations should prove very useful to ecologists in both the plant and animal fields. It is not to be expected that all ecologists and plant geographers will agree with Mr. Howell's conclusions. It must be borne in mind that in so far as we are able to deal with such problems today, we must rely

largely upon interpretation of the innumerable and varied inter-related facts for our conclusions in ecology and plant geography. This being the case, it is important that as many points of view be presented as possible. Mr. Howell presents the point of view of one intimately acquainted with the detailed occurrence of the known species of plants over the area, and of one who has contemplated the details of their local variation. There follow four pages containing a brief resume of the botanical history of the area and including a fitting tribute to the place of Miss Alice Eastwood and the California Academy of Sciences in this history.

The taxonomic section, which represents the bulk of the work, is a scholarly treatment replete with critical notes on variation, ecology, and nomenclature. It is obvious that Mr. Howell's taxonomic conclusions are his own conclusions and not compiled from the taxonomic treatments of others. However, where his conclusions deviate considerably from those of others, they are accompanied by a compelling argument or an explanatory statement. Of the 1,313 species included in the flora, 309 are non-native introduced plants which have become established in this area. In Jepson's "Manual of the Flowering Plants of California" published in 1925, there are included 4,019 species for the entire state, of which 292 are considered to be "alien immigrants." The large proportionate number of introduced plants reported for Marin County reflects Mr. Howell's keen interest in this aspect of botany as well as the changes which have taken place in the flora during the past twenty-five years. The two works, "Marin Flora" and "Ferns and Flowering Plants of Mount Diablo," by Dr. Mary Bowerman, taken together, cover much of the flora of coastal central California. We who habituate this area are indeed fortunate in having two such excellent treatments of its flora.

The twenty-five black and white photographs from the camera of Charles H. Townsend portray the beauty and variety of plant associations and specimen trees that are to be found in Marin County. Two outline maps prepared by Malcolm G. Smith give general localities in Marin County and the trails and localities on Mount Tamalpais. Both maps are indexed; so the newcomer to Marin County will have no difficulty in orienting himself. Much of the glossary of some 380 terms is expressed in refreshingly original language.

As the flora of Marin County is presented by Mr. Howell, it must be construed as a semi-popular work in what I would say is a most successful style. He injects just enough personality to make it very readable. Obviously, when dealing with technical material, it is impossible to reduce all of it to popular language. Mr. Howell, however, draws a very dignified balance between the technical material and popular presentation.—HERBERT L. MASON, Department of Botany, University of California, Berkeley.